

# Weekly Report

2017.10.09-2017.10.15

## 1.This Week

### Summarization Form

Task	Progress	Time
Waveline	System: Solve system data problems and front end using problems. Liwen is preparing the system for user study and Zexian is making pictures for the paper. Paper: Revise 2 cases and user study results.	10.30
NSVA	All materials sent.	10.30
Survey	Not started yet.	
Summarization Material	Finished and sent to Huang.	

### Wavelines

- 1.Deal with the problem of system data.
- 2.The system interface is coded according to the design from Zhang Wei.
- 3.Apply the glyph design to force-directed layout in the topology view and change the zoom in/out details.
- 4.Pictures in the paper are re-designed.
- 5.Finish the summarization material and sent to Huang.

### NSVA

- 1.Finish the acceptance report and test report. The project is to be tested after the 19th meeting.

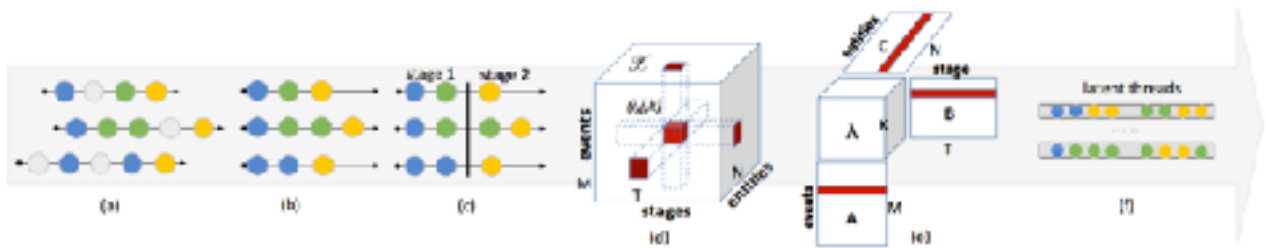
### Others

- 1.Manage the receipts and reimbursement.
- 2.Write this week's Weibo twitter.

### Paper Reading

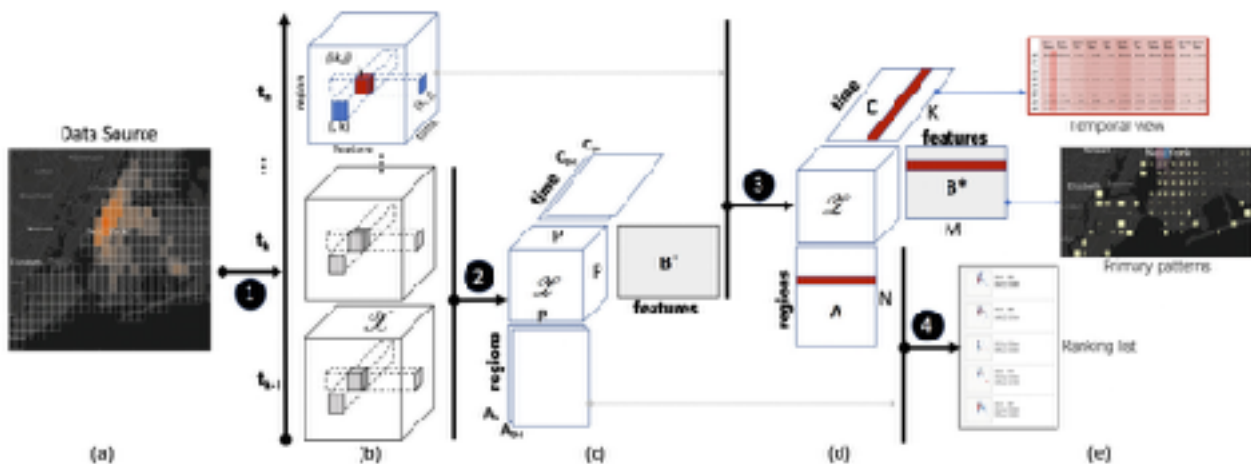
#### 1.EventThread: Visual Summarization and Stage Analysis of Event Sequence Data

This paper collect the event sequences and transform them into a three dimensional tensor(entities, events, stages). And then use tensor decomposition to extract the event threads from all event sequences to reduce the abundance of data. This idea is quite like using topic model to extract topics from text documents. I think it can be applied to other temporal data, especially for the anomaly detection and pattern recognition in temporal data. (The abnormal time periods and patterns can be recognized as events.) Professor Cao Nan also have a tensor-based anomaly detection paper this year.



## 2.Voila: Visual Anomaly Detection and Monitoring with Streaming Spatiotemporal Data

This paper and the paper above (event thread) are all by professor CAO NAN. The basic idea is very similar. In this paper, the streaming spatiotemporal data is transformed into tensor time series. The anomaly detection is realized by expected pattern analysis based on historical data, context analysis based on tensor decomposition and then finally regional anomaly detection in context. Regular anomaly detection methods include statistic-based methods, classification-based (either supervised or semi-supervised), distance-based, and spectral-based. The tensor-based one is very smart.



## 2.TODO

1. Waveline system and paper writing.
2. other projects of power grid started.